ENVIRON: DIPPR Project 911's Vision of Industry Standard Software for Physical Property Display and Selection

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The 12-year history of DIPPR Project 911 at Michigan Technological University has led to the development of the ENVIRON software, first released by EPCON International as ENVIRON 2001, with ENVIRON 2 available in December 2002. The favorable reception of these releases by industry has broadened our vision of the software, in a planned ENVIRON 3 release, as a common interface for such popular data sources as DIPPR Projects 801 and 911, the American Petroleum Institute (API) Technical Database, the compilations of the Thermodynamics Research Center (TRC), etc. ENVIRON adopts the idea of simultaneous display of data values and property estimates, with complete references and technical notes concerning data quality. A unique feature of ENVIRON is its customizable user interface. The user can select a preferred data source or estimation method, customize the display format, and create an abbreviated user list of chemicals. User-specified preferences can be saved and restored. ENVIRON 2 also allows expansion of its database by populating a new chemical name with data and estimations. In ENVIRON 3, this feature will be enhanced to automatically convert chemical formulas into structural information needed by the program's built-in property estimation methods. Because the display is flexible according to the needs of the user, ENVIRON 3 is envisioned to become a general chemical and property selection tool for process designers.

As an initial application to process simulation, when running the American Petroleum Institute's Technical Database software, a designer will be able to access ENVIRON 3 to pick chemicals from a relational list complete with synonyms, chemical family type, source database, structural formula, etc. If desired, the user could also access complete information about the recommended property values for a given chemical, with the ability to make changes. This contrasts with the separation of the chemical selection and database functions in most simulation software. ENVIRON 3 will retain the basic ability to rapidly find and display property values, and a PDA version is under consideration. This paper will present the current features of ENVIRON 2 and preview the ENVIRON 3 enhancements.